QuantGrav Technology Co., Ltd.

SAW Components

For Band8/Unbalanced/5pin/1109

Series type: QGSA942MAASP2

Ordering code: QGSA942MAASP2

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Version: 2.1

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1 Applications

- Saw filter for Celluar/Cordless phone(Terminal) relevant market

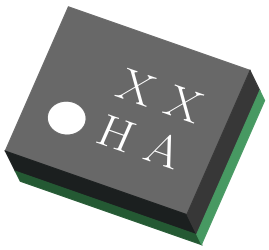


Figure 1: Picture of component with example of product marking.

2 Features

- Package size 1.1 mm x 0.9 mm
- Package height 0.5 mm (max.)
- RoHS compatible
- Package for Surface Mount Technology (SMT)
- Ni/Au-plated terminals
- Electrostatic Sensitive Device (ESD)
- Moisture Sensitivity Level 3 (MSL3)

3 Package

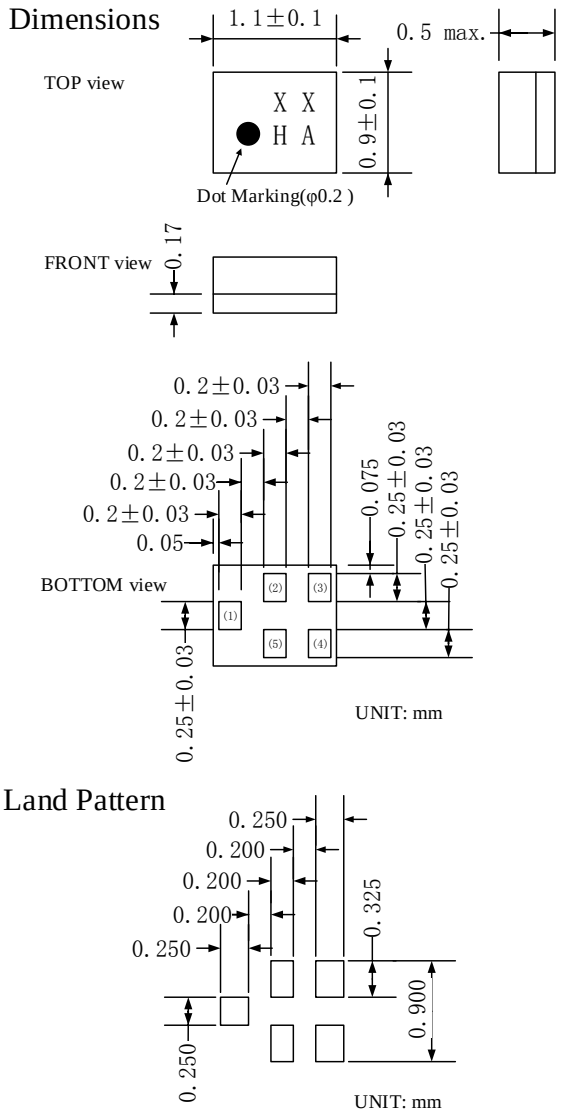


Figure 2: Drawing of package with package height A = 0.5 mm (max.)

4 Pin configuration

- 1 Unbalance Port
- 4 Unbalance Port
- 2,3,5 Ground

5 Matching circuit

- $R_1 : 50\Omega$ $R_2 : 50\Omega$

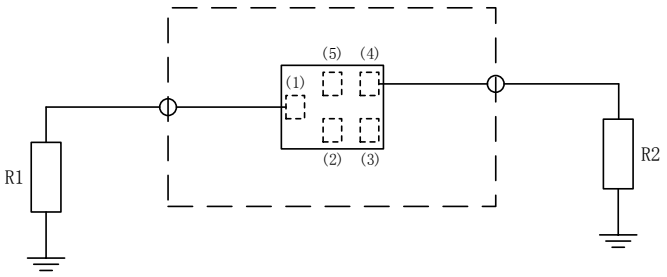


Figure 3: Schematic of matching circuit.

6 Absolute Maximum Ratings

Table 1: Absolute Maximum Ratings of Example Data Sheet

Parameter	**Rating**
Storage temperature	$T_{STG} = -40°C$ to $+85°C$
Operating temperature	$T_{opt} = -30°C$ to $+85°C$
DC voltage	$V_{DC} = 3.0V(max)$
Input power	$P_{IN} = +15dBm$ 5000h
Minimum Resistance between the terminals	$10Mohm$

7 Characteristics

Temperature range for specification $T_{SPEC} = -20°C \ldots +85°C$

Input terminating impedance $Z_{IN} = 50\Omega$

Output terminating impedance $Z_{OUT} = 50\Omega$

Item		min.	typ.	max.	Unit	Note
Center Frequency			942.5		MHz	
Insertion Loss	925 to 960 MHz		2.0	2.8	dB	
Ripple Deviation	925 to 960 MHz		1.8	2.3	dB	
VSWR	925 to 960 MHz		2.0	2.2		
Absolute Attenuation	450 to 880 MHz	35	41		dB	
	835 to 870 MHz	41	45		dB	
	880 to 915 MHz	39	48		dB	
	980 to 1045 MHz	25	30		dB	
	1045 to 6000 MHz	30	37		dB	
	1427 to 1448 MHz	38	43		dB	
	1710 to 1785 MHz	40	45		dB	
	1805 to 1920 MHz	40	46		dB	
	1920 to 1980 MHz	40	46		dB	
	2400 to 2500 MHz	40	48		dB	
	2500 to 2570 MHz	40	47		dB	
	2685 to 2790 MHz	40	45		dB	
	2775 to 2880 MHz	40	45		dB	
	2880 to 3700 MHz	40	43		dB	
	3700 to 3840 MHz	39	40		dB	
	4625 to 4800 MHz	39	40		dB	
	4900 to 5950 MHz	34	35		dB	

8 Transmission coefficients

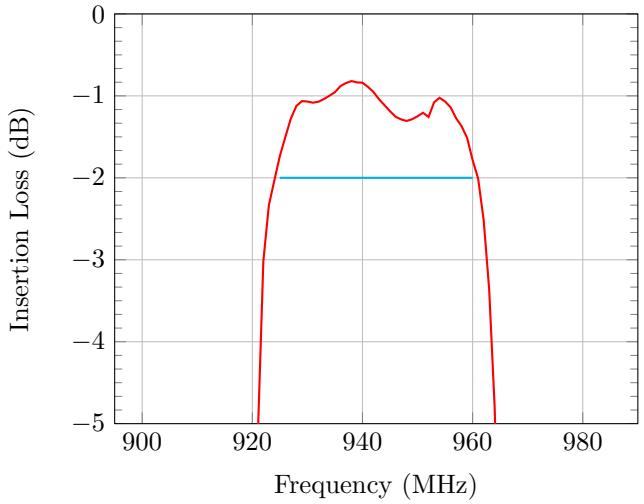


Figure 4: Passband

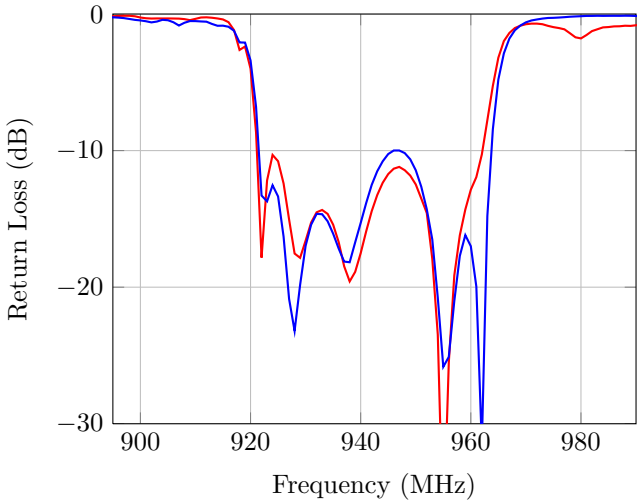


Figure 5: Input/Output Return Loss

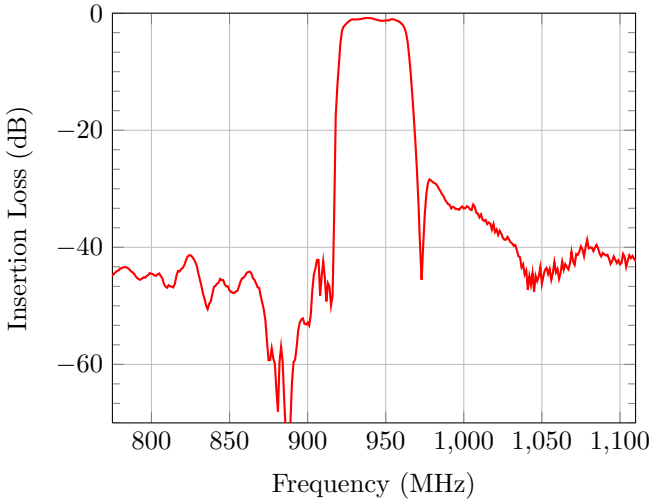


Figure 6: Narrowband

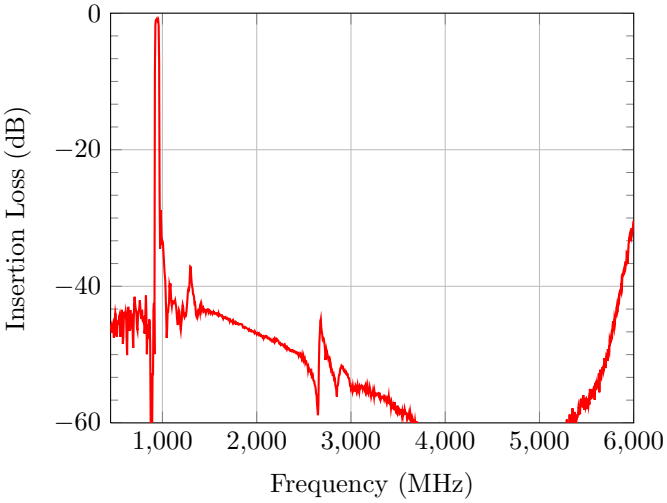


Figure 7: Wideband

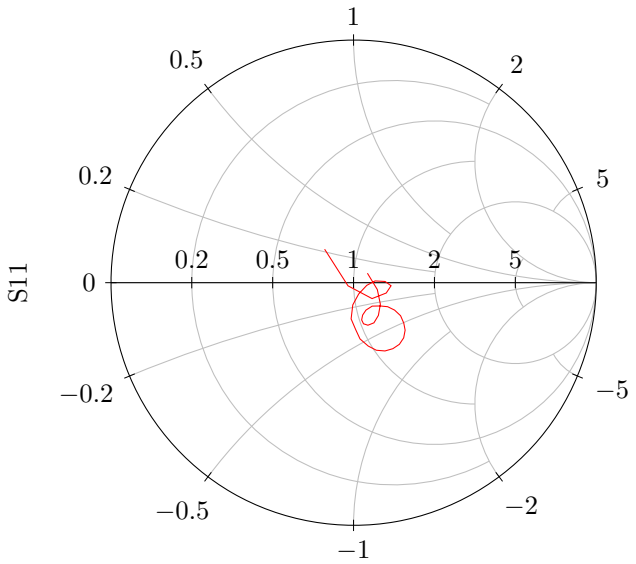


Figure 8: Input Smith Chart ($Z0 = 50\Omega$)

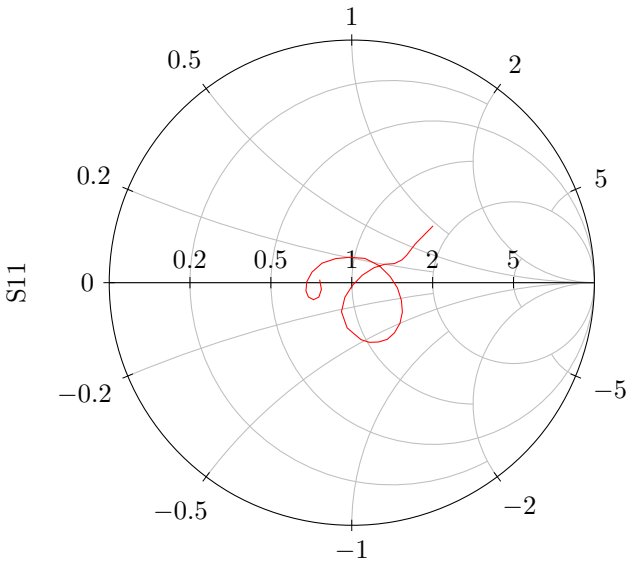


Figure 9: Output Smith Chart ($Z0 = 50\Omega$)

9 Soldering profile

The recommended soldering process is in accordance with IEC 60068-2-58–3rd edit and IPC/JEDECJ-STD-020B.

Table 2: Characteristics of recommended soldering profile for lead-free solder (Sn95.5Ag3.8Cu0.7).

Parameter	**Rating**
Ramp rate	$\geq$ 3 K/s
Preheat	125 $°C$ to 220 $°C$, 150 s to 210 s, 0.4 K/s to 1.0 K/s
T >220 $°C$	30 s to 70 s
T >230 $°C$	Min. 10 s
T >245 $°C$	Max. 20 s
T $\leq$ 255 $°C$	-
Peak temperature T_{peak}	220 $°C$ $\pm 5°C$
Wetting temperature T_{min}	230 $°C$ $\pm 5°C$ for $10s \pm 1s$
Cooling rate	$\geq$ 3 K/s
Soldering temperature T	Measured at solder pads

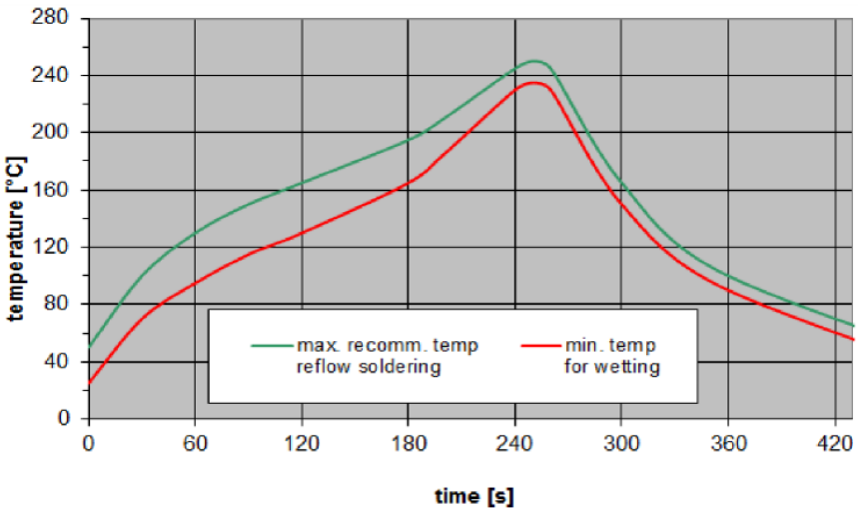
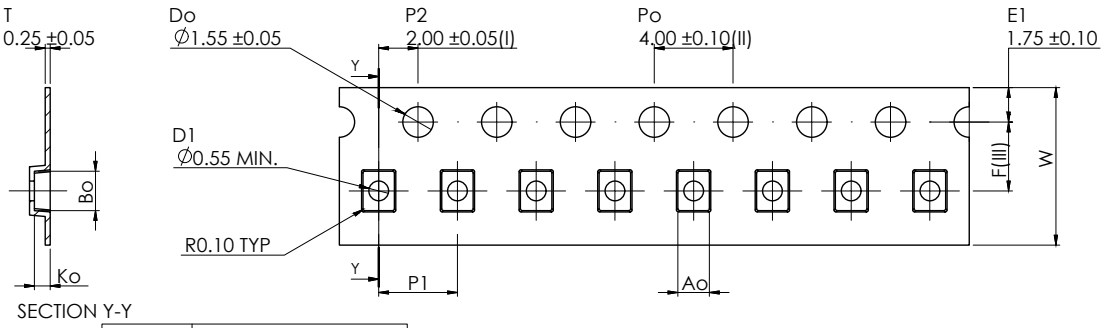


Figure 10: Drawing of reel (Recommended reflow profile for convection and infrared soldering – lead-free solder

10 Tape and Reel

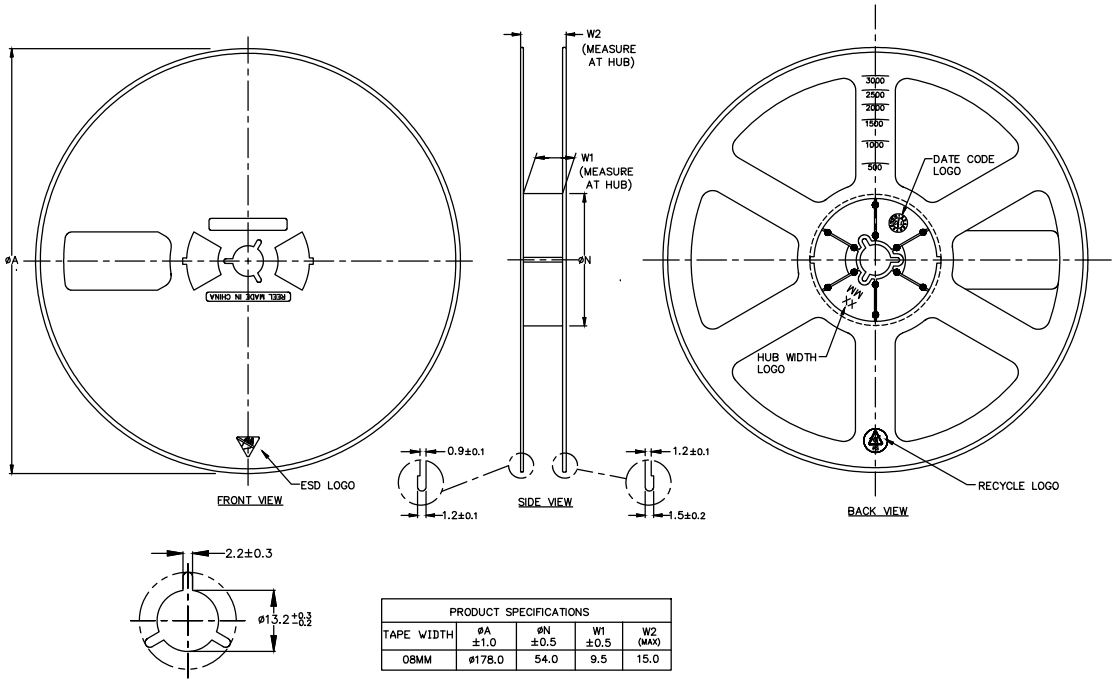
10.1 Tape



Ao	1.02 +/- 0.05
Bo	1.22 +/- 0.05
Ko	0.60 +/- 0.05
F	3.50 +/- 0.05
P1	4.00 +/- 0.10
W	8.00 +/- 0.10

Figure 11: Drawing of tape (first-angle projection) with tape dimensions

10.2 Reel with diameter of 178 mm



PRODUCT SPECIFICATIONS				
TAPE WIDTH	øA ±1.0	øN ±0.5	W1 ±0.5	W2 (MAX)
08MM	ø178.0	54.0	9.5	15.0

Figure 12: Drawing of reel (first-angle projection) with diameter of 180 mm